

We Claim:

5 1. A blood separation assembly comprising
a blood processing chamber comprising a base
including formed walls that define a separation channel, and
a centrifuge rotor rotatable about a rotational
axis, the centrifuge rotor including a latch assembly
including a latch arm pivotally mounted on the centrifuge
rotor for movement between a chamber-retaining position
engaging the blood processing chamber, to secure the blood
processing chamber to the centrifuge rotor, and a chamber-
releasing position free of engagement with the blood
processing chamber, to enable removal of the blood
processing chamber from the centrifuge rotor, and a pawl
movable on the centrifuge rotor between a first position
adjacent the latch arm and a second position spaced from the
latch arm, the pawl including a locking element that engages
the latch arm when the latch arm is in the chamber-retaining
position to resist movement of the latch arm toward the
chamber-releasing position, and a spring coupled to the pawl
to bias the pawl toward the first position.

10 2. An assembly according to claim 1
wherein the formed walls of blood processing
chamber include an annular lip, and
wherein the latch assembly includes an annular
5 grove on the centrifuge rotor sized to mate with the annular
lip, the latch arm including a groove that coincides with
the annular groove when the latch arm is in the chamber-
retaining position and that interrupts the annular groove
when the latch arm is in the chamber-releasing position.

15 3. An assembly according to claim 1
wherein the pawl includes a key element that
moves in concert with the pawl, and
further including a collar mounted for rotation
5 relative to the centrifuge rotor about the rotational axis,
the collar including a sidewall that interferes with the key
element to prevent movement of the pawl from the first
position toward the second position, the collar including a

10 cut away region that moves into and out of mutual alignment
with the key element during rotation of the centrifuge rotor
relative to the collar, the cut away region being sized to
permit passage of the key element in response to movement of
the pawl from the first position toward the second position
when the key element and cut away region are in mutual
15 alignment.

4. An assembly according to claim 1

5 wherein the blood processing chamber comprises a
molded base assembly defining a hub about which the
separation channel circumferentially extends, and at least
one radial passage that directs fluid between the hub and
the separation channel.

5 A blood separation assembly comprising
a frame rotatable about a rotational axis,
a rotor carried by the frame for relative
rotation about the rotational axis,

5 a blood processing chamber comprising a base
including formed walls that define a separation channel, and
a latch assembly on the rotor including a latch
arm mounted for movement between a chamber-retaining
position engaging the blood processing chamber to secure the
10 blood processing chamber to the rotor for common rotation
therewith relative to the frame and a chamber-releasing
position free of engagement with the blood processing
chamber to enable removal of the blood processing chamber
from the rotor.

6. An assembly according to claim 5

5 wherein the latch assembly includes a pawl
movable on the rotor between a first position adjacent the
latch arm and a second position spaced from the latch arm,
the pawl including a locking element that engages the latch
arm when the latch arm is in the chamber-retaining position
to resist movement of the latch arm toward the chamber-
releasing position, and a spring coupled to the pawl to bias
the pawl toward the first position.

7. An assembly according to claim 6

wherein the pawl includes a key element that moves in concert with the pawl, and

5 further including a collar mounted on the frame for rotation with the frame relative to the rotor, the collar including a sidewall that interferes with the key element to prevent movement of the pawl from the first position toward the second position, the collar including a cut away region that moves into and out of mutual alignment with the key element during relative rotation of the frame and rotor, the cut away region being sized to permit passage of the key element in response to movement of the pawl from the first position toward the second position when the key element and cut away region are in mutual alignment.

8. An assembly according to claim 5

further including an umbilicus coupled to the separation chamber, and

5 wherein the frame includes at least one umbilicus support element that engages the umbilicus when the blood processing chamber is secured to the rotor and rotates the umbilicus about the rotational axis during rotation of the frame, the rotation of the umbilicus imparting rotation to the rotor.

9. An assembly according to claim 8

5 wherein the blood processing chamber comprises a molded base assembly defining a hub about which the separation channel circumferentially extends, and at least one radial passage that directs fluid between the hub and the separation channel, the hub being further formed to enable attachment of the umbilicus to convey blood to and from the separation channel through the hub.

10. An assembly according to claim 4

5 wherein the blood processing chamber comprises a molded base assembly defining a hub about which the separation channel circumferentially extends, and at least one radial passage that directs fluid between the hub and the separation channel.